Influence of ozone pre-treatment on the quality of frozen strawberries (*Fragaria ananassa* D.)

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Freezing is one of the best food preservation processes. For maximum quality retention, washing treatments may precede freezing. In the case of fruits, the use of disinfectants such as hydrogen peroxide and weak chlorine solutions is common for cleaning and purifying purposes. More recently, ozone is gaining importance in the food processing domain, due to its strong oxidising characteristics, being one of the most natural purification and disinfectant agents for fresh produce and water treatment (Suslow, 1999).

The objective of this work was to study the influence of ozone in aqueous solution, used before freezing and frozen storage, on quality parameters (i.e. colour, pH, anthocyanins content and texture) of strawberries.

Ozone was continuously incorporated in water at 15ºC, using an ozone generator. Strawberries (*Fragaria ananassa* D.) were immersed in ozonated and non-ozonated water baths for two minutes. All samples were frozen (-30ºC, 30 min, blast and fluidized bed freezer) and stored at -7 and –30 ± 0,1ºC in freezing chambers. Quality parameters were evaluated along 70 storage days. Data were compared by analysis of variance.

Results showed that pH, colour and anthocyanins of strawberries were not affected either by the washing treatments applied, or the freezing and frozen storage temperature and time. As expected, the freezing process greatly affected texture attributes. However, no evident differences were observed between samples treated with or without ozone.

References

Suslow, T.V. 1999. Ozone applications for postharvest disinfection of edible horticultural crops. *Perishables Handling Quarterly*. 99: 1-14.